REMARKS

I. Introduction

Claims 1 to 30 are currently pending in this application. In view of the foregoing amendments and following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 1 to 30 Under 35 U.S.C. § 102 (b)

Claims 1 to 30 were rejected under 35 U.S.C. § 102 (b) as anticipated by U.S. Patent No. 5,029,087 ("Cowan et al."). Applicant respectfully submits that Cowan et al. do not anticipate claims 1 to 30, as amended, for the following reasons.

Claim 1 relates to a method for operating a torque-converter lockup clutch for a hydrodynamic torque converter. Claim 1 recites that the slip of the torque converter is adjusted using a setpoint value, while the torque-converter lockup clutch is being closed. Claim 1 has been amended herein without prejudice to recite that the setpoint value is continuously selected inside a closing interval after the initiation of said closing interval as a function of time and taking into account the input torque currently applied to the torque converter. Support for the amendments to claim 1 may be found, for example, on page 4, line 18 to page 5, line 8 and throughout the remainder of the Specification.

Claim 11 relates to a control device for a torque-converter lockup clutch for a hydrodynamic torque converter. Claim 11 recites that a sensor for detecting the input torque applied to the torque converter is connected to a control unit. Claim 11 has been amended herein without prejudice to recite that the control unit selects a setpoint value inside a closing interval after the initiation of said closing interval for the slip of the torque converter as a function of time and takes into consideration the input torque currently being applied to the torque converter inside the closing interval. Support for the amendments to claim 11 may be found, for example, on page 4, line 18 to page 5, line 8 and throughout the remainder of the Specification.

Claim 16 relates to a method for operating a torque-converter lockup clutch for a hydrodynamic torque converter. Claim 16 recites the step of adjusting the slip of the torque converter in accordance with a setpoint value while closing the torque-converter lockup clutch. Claim 16 has been amended herein without

prejudice to recite that the setpoint value is continuously selected inside a closing interval after the initiation of said closing interval as a function of time and takes into account the input torque currently applied to the torque converter. Support for the amendments to claim 16 may be found, for example, on page 4, line 18 to page 5, line 8 and throughout the remainder of the Specification.

Claim 26 relates to a control device for a torque-converter lockup clutch for a hydrodynamic torque converter. Claim 26 recites that the control device includes a control unit and a sensor connected to the control unit. Claim 26 recites that the sensor is configured to detect input torque applied to the torque converter. Claim 26 has been amended herein without prejudice to recite that the control unit is configured to select a setpoint value for the slip of the torque converter inside a closing interval after the initiation of said closing interval as a function of time and taking into consideration the input torque currently being applied to the torque converter. Support for the amendments to claim 26 may be found, for example, on page 4, line 18 to page 5, line 8 and throughout the remainder of the Specification.

Cowan et al. purportedly relate to a control for a hydrokinetic torque converter lockup clutch. Abstract. Cowan et al. state that desired slip is calculated based upon actual converter slip and a final target value for the slip. See col. 10, lines 66 to 68. The value for the desired slip is determined based upon the actual slip and a final target value and subtracting from the actual slip a percentage of the difference between the actual slip and the first target slip. Use of the above formula is stated to result in an exponentially decaying slip that approaches the final target to assure a gradual transition into the closed state of the clutch. See col. 15, lines 53 to 59.

Cowan et al. state that the controller reduces slip error and determines slip error by comparing the desired slip (as calculated above, using the exponentially decaying slip) to the actual slip. See col. 3, lines 12 to 14. Plot 199 is stated to be result of a calculation using three error values, i.e., the error (E0) currently measured by the slip controller, the error (E1) determined in the previous background loop and the error (E2) determined in the second previous background loop. See col. 13, lines 15 to 21. At the end of each background loop the previous error (E2) is set equal to (E1) and the previous error (E1) is set equal to (E2) as the error (E0) is set equal to the absolute slip minus the desired slip. See col. 14, lines 14 to 18. This is stated to update the information for each background loop so that a new error can

be calculated for the next loop. See col. 14, lines 18 to 20. As seen from FIGS. 6A, the value of A (absolute slip) approaches the target slip value as the background loops are repeated. See col. 13, lines 36 to 38.

Cowan et al. do not disclose, or even suggest, selecting a setpoint value inside a **closing interval after the initiation of said closing interval** of the torque converter taking into account the input torque currently applied to the torque converter, as recited in claims 1, 11, 16 and 26.

More specifically, nowhere, do Cowan et al. disclose, or even suggest, the setpoint value being continuously selected inside a closing interval after the initiation of said closing interval as a function of time and taking into account the input torque currently applied to the torque converter, as recited in claim 1, nor do Cowan et al. disclose, or even suggest, that the control unit selects a setpoint value inside a closing interval after the initiation of said closing interval for the slip of the torque converter as a function of time and takes into consideration the input torque currently being applied to the torque converter inside the closing interval, as recited in amended claim 11, nor do Cowan et al. disclose, or even suggest, that the setpoint value is continuously selected inside a closing interval after the initiation of said closing interval as a function of time and takes into account the input torque currently applied to the torque converter, as recited in claim 16, nor do Cowan et al. disclose, or even suggest, a control unit configured to select a setpoint value for the slip of the torque converter inside a closing interval after the initiation of said closing interval as a function of time and taking into consideration the input torque currently being applied to the torque converter, as recited in claim 26.

As indicated above, Cowan et al. purportedly reduce slip error as the background loops are repeated on a loop-by-loop basis. See col. 3, lines 12 to 14 and col. 13, lines 36 to 38. However, the setpoint value is not changed within a given loop or midloop, i.e., inside a closing interval of the torque converter after the initiation of said closing interval. Let alone, is the setpoint value changed as a function of time and taking into consideration the input torque currently being applied to the torque converter, as recited in amended claims 1, 11, 16 and 26. Consistent with the above, Cowan et al. state that rapid torque changes result in "eventual compensation of duty cYcle [sic]," i.e., over successive loops, but that the system "will allow rapid torque changes," i.e., without generating a new setpoint value, "to be absorbed by short periods of increased slip, or decreased slip," i.e., within a given

closing interval, "as the case may be, without being felt by the driver." See col. 15, lines 47 to 53. Therefore, Cowan et al. do not disclose all of the limitations of amended claims 1, 11, 16 and 26.

The Final Office Action alleges that Cowan et al. disclose in figures 5 and 6, and on lines 11 to 31, on column 13, a control loop that repeatedly determines a new target value 199 (or set point value) of the slip of the converter. See Final Office Action at p. 4. The Final Office Action further alleges that "in each loop of the method in figure 5, a new value for the desired slip is calculated as seen in 199 in figure 6." Final Office Action at p. 4.

Applicant respectfully submits that Cowan et al. fail to disclose, or even suggest, the selection of a setpoint value inside a closing interval after the initiation of said closing interval of the torque converter taking into account the input torque currently applied to the torque converter, as recited in amended claims 1,11, 16 and 26. Use of the term "in each loop" above implies that the new value is calculated during a loop. However, the determination of setpoint value is at time t0. As indicated above, plot 199 is stated to be result of a calculation using three error values, i.e., the error (E0) currently measured by the slip controller, the error (E1) determined in the previous background loop and the error (E2) determined in the second previous background loop. See col. 13, lines 15 to 21. At the end of each background loop the previous error (E2) is set equal to (E1) and the previous error (E1) is set equal to (E2) as the error (E0) is set equal to the absolute slip minus the desired slip. See col. 14, lines 14 to 18. This is stated to update the information for each background loop so that a new error can be calculated for the next loop. See col. 14, lines 18 to 20. The setpoint value is not calculated during or inside a closing interval after the initiation of said closing interval, as recited in amended claims 1, 11, 16 and 26.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that

nowhere, do Cowan et al. disclose, or even suggest, the setpoint value being continuously selected inside a closing interval after the initiation of said closing interval as a function of time and taking into account the input torque currently applied to the torque converter, as recited in claim 1, nor do Cowan et al. disclose, or even suggest, that the control unit selects a setpoint value inside a closing interval after the initiation of said closing interval for the slip of the torque converter as a function of time and takes into consideration the input torque currently being applied to the torque converter inside the closing interval, as recited in amended claim 11, nor do Cowan et al. disclose, or even suggest, that the setpoint value is continuously selected inside a closing interval after the initiation of said closing interval as a function of time and takes into account the input torque currently applied to the torque converter, as recited in claim 16, nor do Cowan et al. disclose, or even suggest, a control unit configured to select a setpoint value for the slip of the torque converter inside a closing interval after the initiation of said closing interval as a function of time and taking into consideration the input torque currently being applied to the torque converter, as recited in claim 26. Therefore, it is respectfully submitted that Cowan et al. do not anticipate claims 1, 11, 16 and 26.

As for claims 2 to 10, which ultimately depend from claim 1 and therefore include all of the limitations of claim 1, Applicant respectfully submits that Cowan et al. do not anticipate these dependent claims for at least the same reasons provided above in support of the patentability of claim 1.

As for claims 12 to 15, which ultimately depend from claim 11 and therefore include all of the limitations of claim 11, Applicant respectfully submits that Cowan et al. do not anticipate these dependent claims for at least the same reasons provided above in support of the patentability of claim 11.

As for claims 17 to 25, which ultimately depend from claim 16 and therefore include all of the limitations of claim 16, Applicant respectfully submits that Cowan et al. do not anticipate these dependent claims for at least the same reasons provided above in support of the patentability of claim 16.

As for claims 27 to 30, which ultimately depend from claim 26 and therefore include all of the limitations of claim 26, Applicant respectfully submits that Cowan et al. do not anticipate these dependent claims for at least the same reasons provided above in support of the patentability of claim 26.

In summary, Applicant submits that claims 1 to 30 are patentable over Cowan et al. Therefore, withdrawal of the 35 U.S.C. §102(b) rejection and allowance of claims 1 to 30 is respectfully requested.

III. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

KENYON & KENYON

Dated: December 9, 2003 By: _____
Richard L. Mayer
Reg. No. 22,490

Reg. No. 42,194

One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646